

### **ABSTRACT**

A toploading weighing instrumentality which determines loss on drying by a cylindrical microwave. The cylindrical cavity of the microwave includes a power supply, a magnetron, a power module operatively coupled between said power supply and said magnetron for driving said magnetron, a wave guide communicating with the magnetron and with a microwave containment chamber for delivering energy thereto, at least one microwave energy sensor for sensing microwave energy or magnetic and/or electric field strengths within the chamber for controlling, inter alia, the loss on drying process of the sample being assayed and determining when the drying process is complete. A precision electronic balance is operatively disposed within the microwave chamber for allowing a specimen being assayed to be weighed. In addition, a ventilation chamber is provided for venting moisture from the microwave chamber. A processing unit and associated memory allows means for data acquisition, processing and storage of data from the power module driving the magnetron, the microwave energy sensor(s) for sensing magnetic and/or electric fields and the electronic balance for weighing the initial and final weights of the specimen for loss on drying moisture analysis. Both signaling the removal of microwave energy in the chamber.